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Jones, Raymond D.

Monterey, California. Naval Postgraduate School

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# **Why Do Programs Fail? An Analysis of Defense Program Manager Decision Making in Complex and Chaotic Program Environments**

Raymond D. Jones





**The Pentagon now spends about \$21.6 million every hour to procure new military systems. As the cost and complexity of defense acquisitions programs continue to spiral out of control, many defense experts believe runaway military spending is unsustainable. Meanwhile, soldiers in the field are being denied much-needed equipment, while civilian programs go unfunded.**



***“IEEE Spectrum”***

[illegible]

- ❑ Constrained budgets,
- ❑ Improved cost estimating (influenced by the Weapon System Acquisition Reform Act of 2009),
- ❑ Fewer new starts,
- ❑ The cancellation or curtailment in recent years of troubled programs,
- ❑ The impact of a generation of acquisition professionals who rose through the system under the Defense Acquisition Workforce Improvement Act
- ❑ The continuity and consistency of actions taken by the office of the Under Secretary of Defense for Acquisition, Technology, and Logistics (AT&L).

Year	Significant	Critical
2007	4	1
2008	1	3
2009	1	7
2010	4	4
2011	0	4
2012	0	1
2013	2	2
2014	1	1
2015	0	1

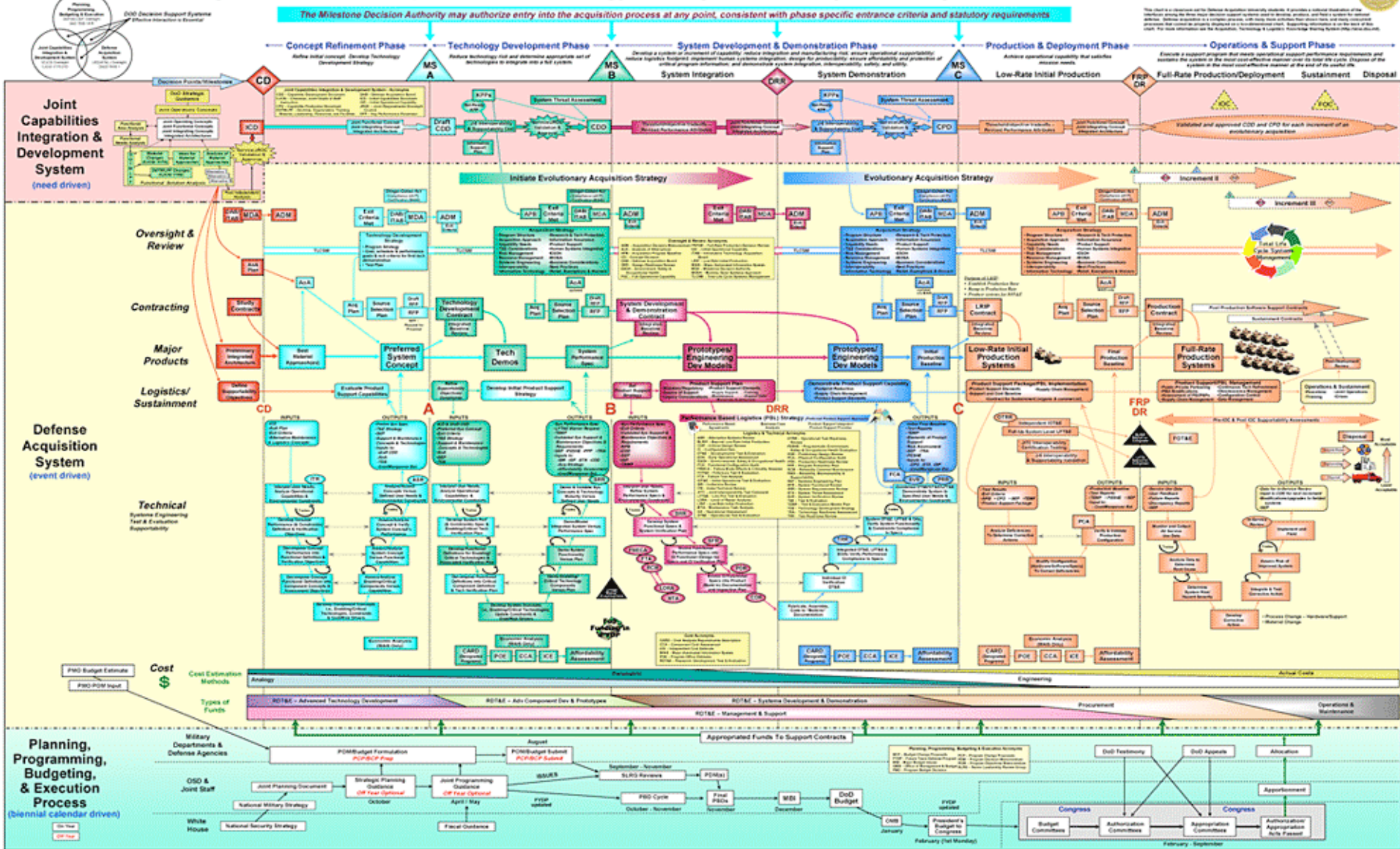
# What did they want?



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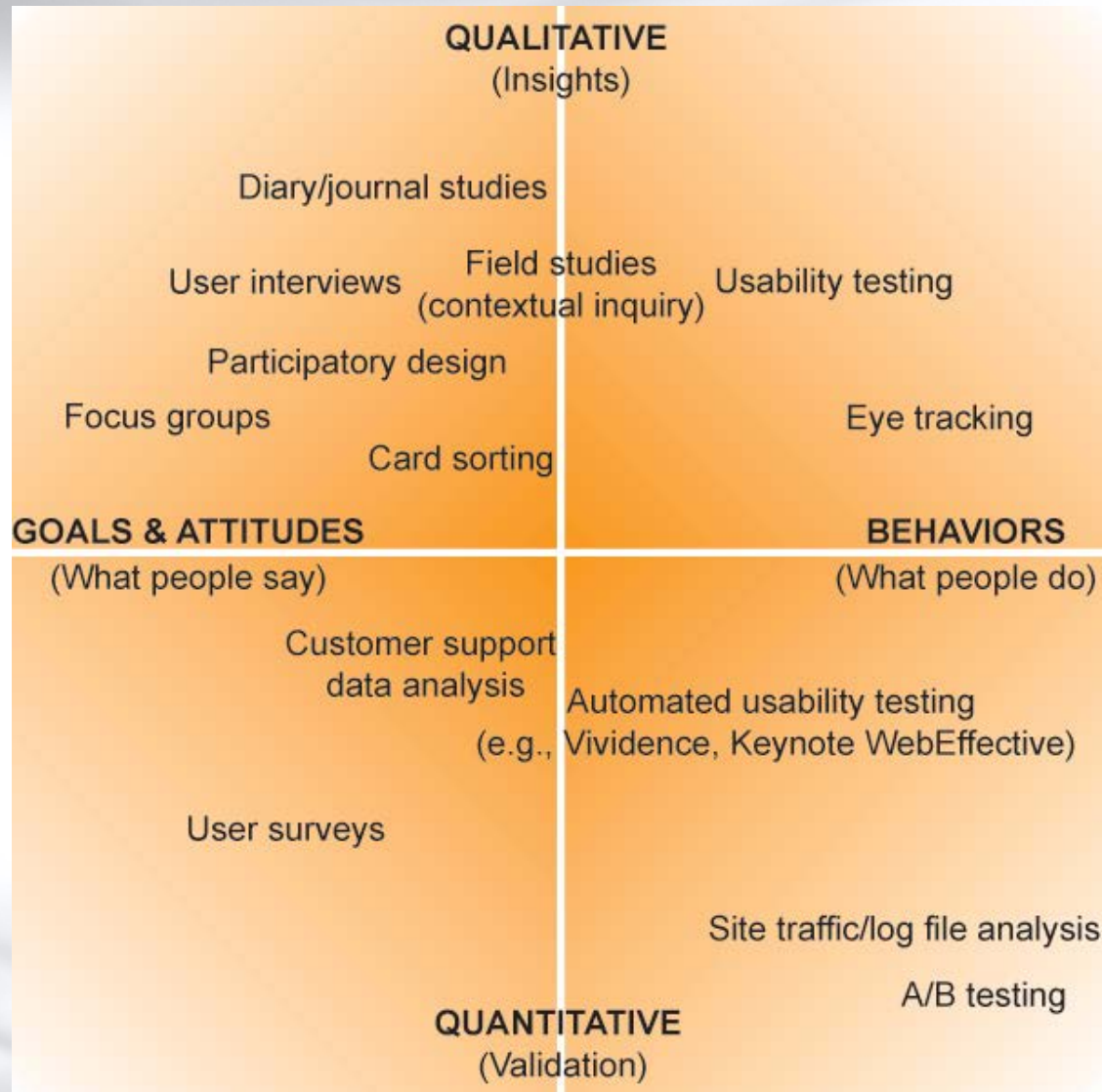


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# Research Methods

- How should we study the problem?
  - **Quantitative** methods emphasize objective measurements and the statistical, mathematical, or numerical analysis of data collected through polls, questionnaires, and surveys, or by manipulating pre-existing statistical data using computational techniques.
  - **Qualitative Research** is primarily exploratory research. It is used to gain an understanding of underlying reasons, opinions, and motivations. It provides insights into the problem or helps to develop ideas or hypotheses for potential quantitative research.
  - **Mixed methods research** is a methodology for conducting research that involves collecting, analyzing and integrating quantitative (e.g., experiments, surveys) and qualitative (e.g., focus groups, interviews) research. This approach to research is used when this integration provides a better understanding of the research problem than either of each alone.

# How Do You Research Acquisition?





# Research Objective

***The problem this research seeks to understand is the underlying nature of why program manager's decision making does not consistently manifest in improved program performance.***



## What's the Difference?





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# Phased Approach

1. What is the underlying nature of how decision makers gain a sense of reality by which their decisions are subsequently informed within the unique construct of their functional framework?
2. How do program managers of Major Defense Acquisition Programs (MDAPs) make sense of complex and chaotic program environments, and does this differ from other professions that operate in complex environments?

# DIKW Model

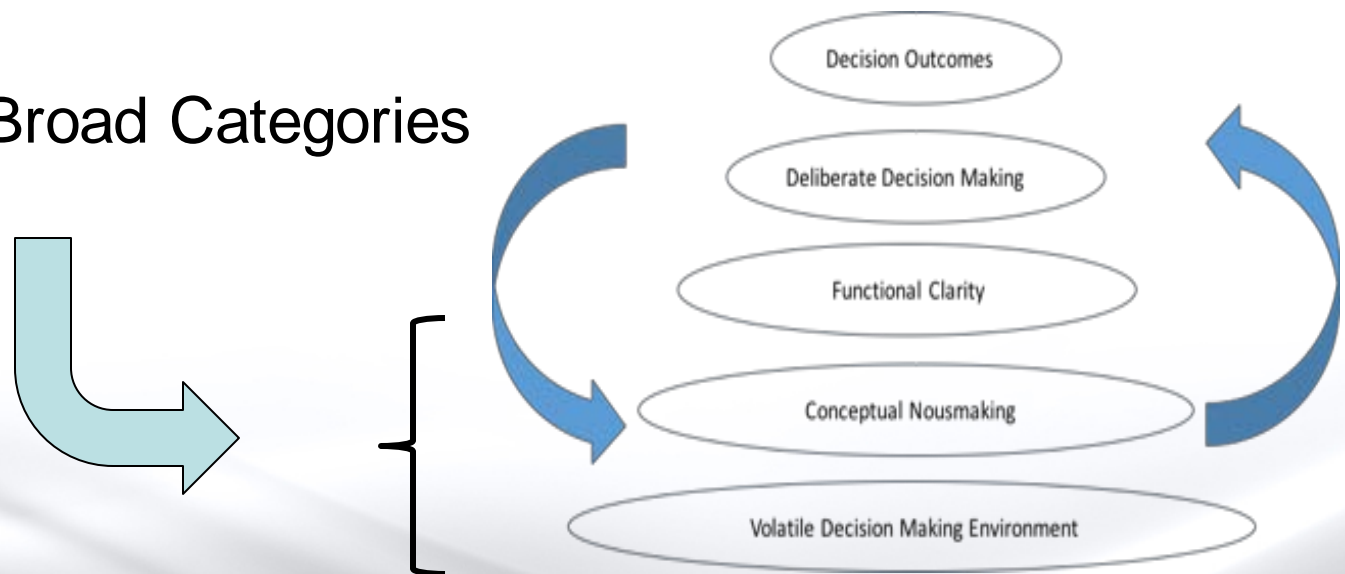


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# Method

- Qualitative approach using Grounded Theory
- Focus a leaders attempts of establishing reality within a complex and chaotic environment
- Conduct detailed literature review
- Conduct functional area independent interviews and analyze
- Establish Broad Categories





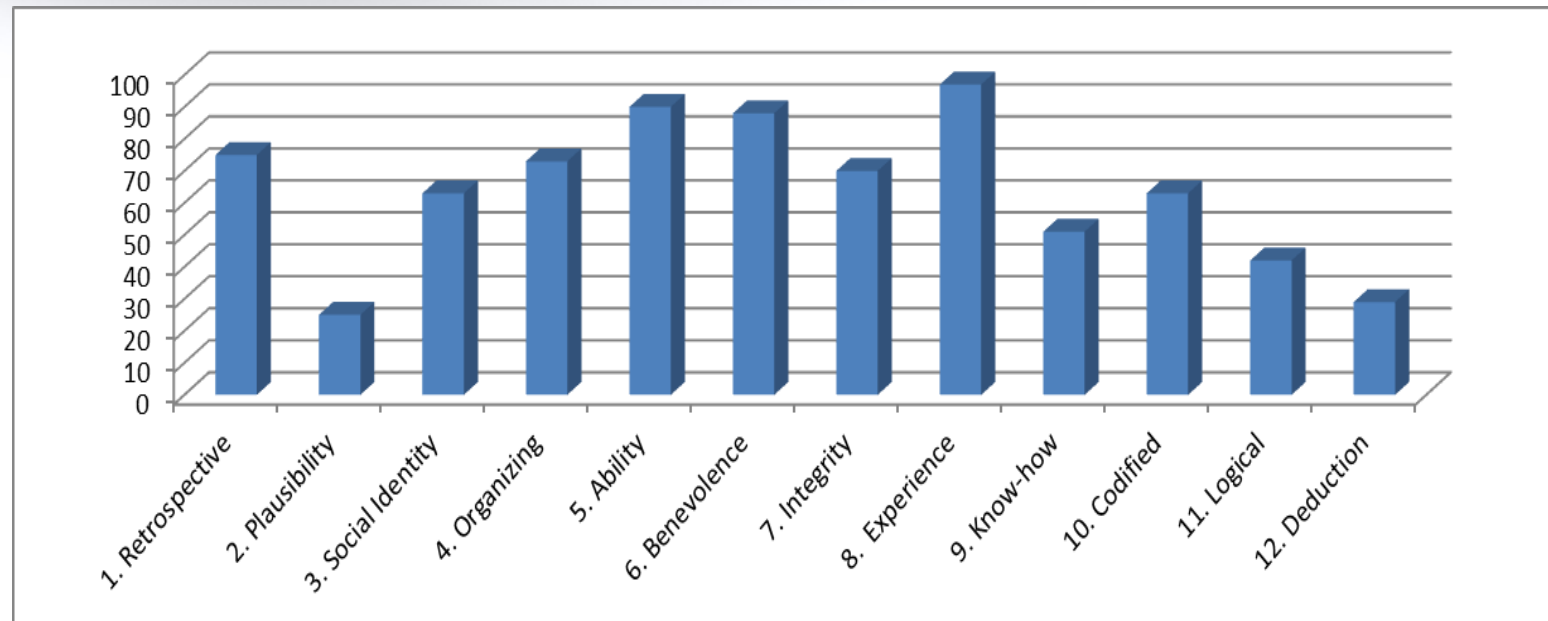
# First Order Codes and Aggregate Categories

**Table 1. Conceptual Nousmaking Categories**

Second Order Analytic Code	Aggregate Category
1. Retrospective	Sensemaking
2. Plausibility	
3. Social Identity	
4. Organizing	
5. Ability	Trust
6. Benevolence	
7. Integrity	
8. Experience	Tacit Knowledge
9. Know-how	
10. Codified	Explicit Knowledge
11. Logical	
12. Deduction	

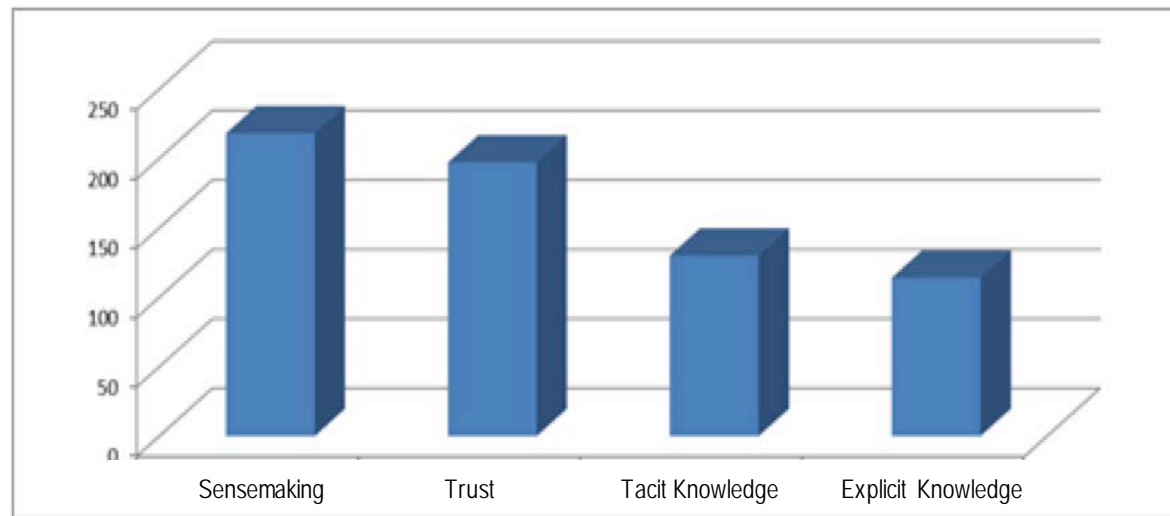
Hypothesis 1: Nousmaking is independent of the functional clarity of the operational environment in which choices are formulated.

# Initial Coding Summary



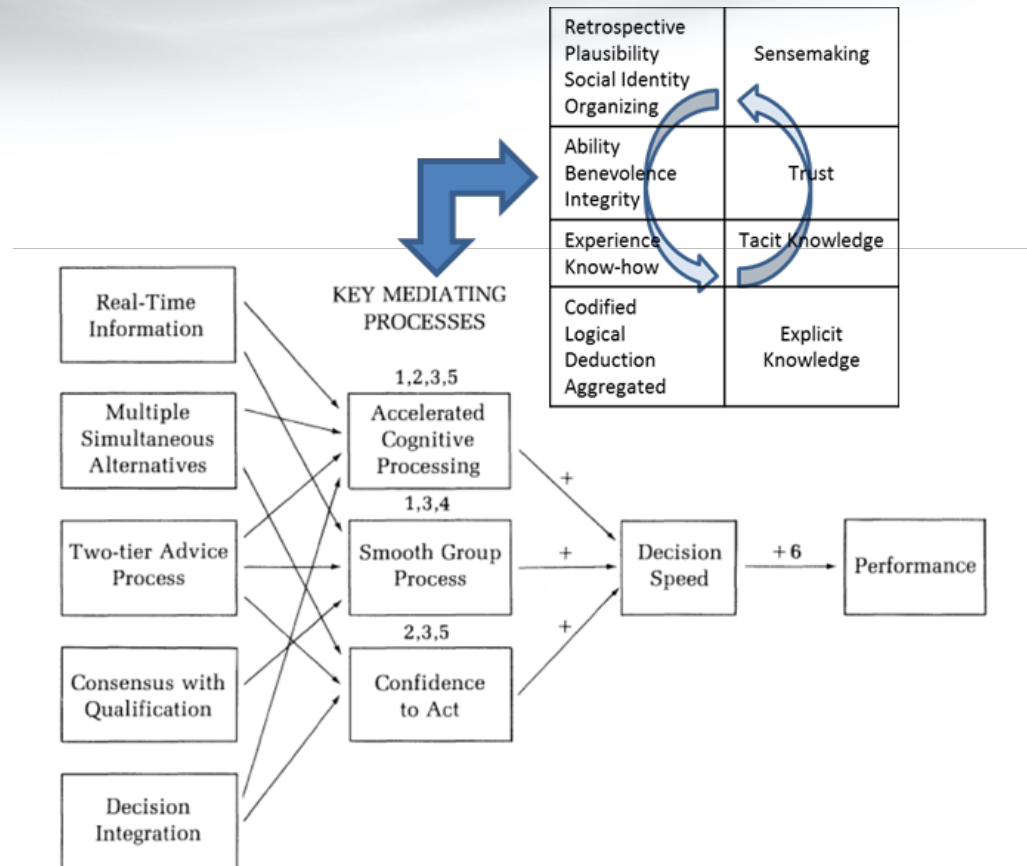
**Figure 4: Second-Order Code Summary by Number of Observations for All Interviewees**

# Aggregate Category Summary



**Figure 3: Summary of the Total Number of Observations of the Aggregate Categories during a Chaotic Decision-Making Window for All Interviewees**

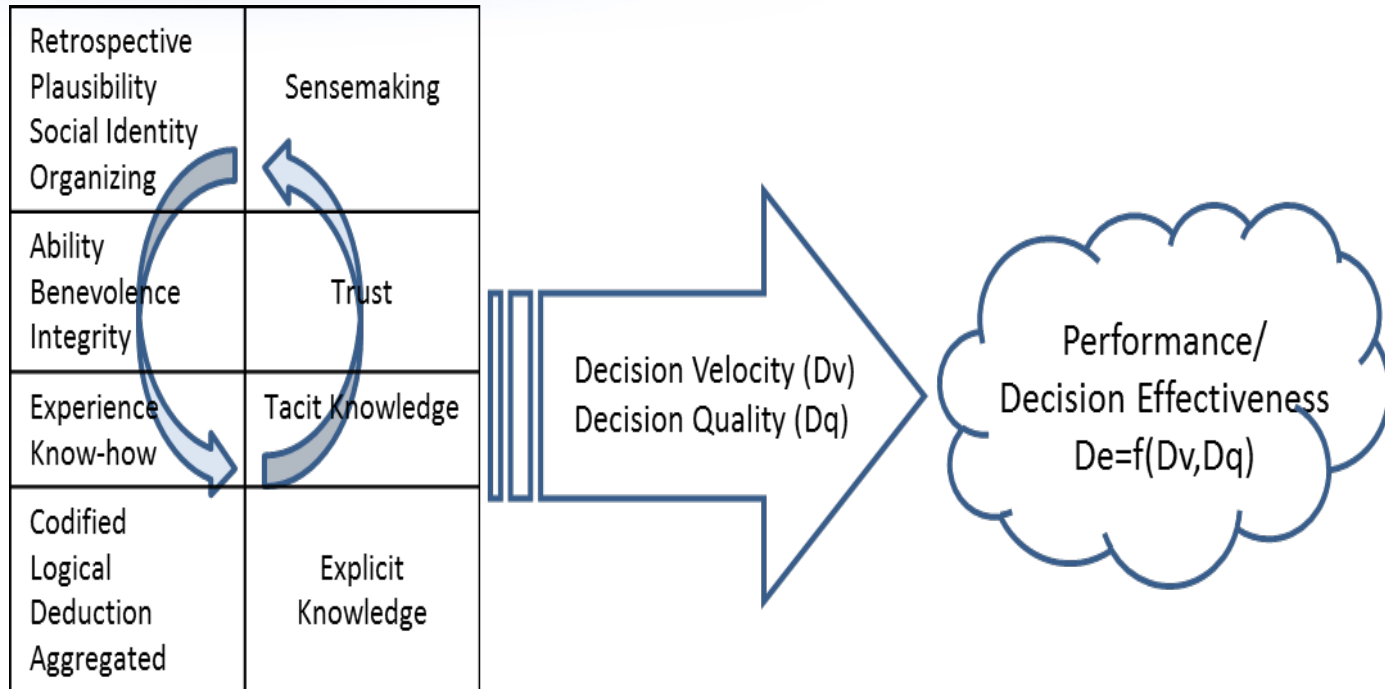
# Nousmaking and Decisions



**Figure 6: Relationship Between Eisenhardt (1989) Model of Strategic Decision Speed in High-Velocity Environments, With Aggregate Categories**



# Nousmaking and Decisions



**Figure 5: Interactive Relationship Between Four Aggregate Categories and Decision Effectiveness**



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# What's Next?

- More in depth literature search
- More Interviews
  - Cross discipline
- More coding
- Move from Nousmaking to Functional Alignment to begin to assess “What’s Different”.



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# Why is This Important?

- ❑ Chaotic and complex decision-making environments are not limited to combat scenarios.
- ❑ The nonlinearity of these events in which human decision making is predicated by chaos may have certain similarities and patterns that can be studied with regard to their association with the individuals involved in the decision-making process.
- ❑ Complex and high risk business environments can also manifest themselves in a chaotic or unpredictable nature and could be subject to the same cognitive processes as combat.
- ❑ If we better understood the decision-making that leads to making effective decisions in ambiguous environments, perhaps future organizational and leadership theory and methods could be better tailored to the environment, leading to more predictable outcomes.